System Image Creation and Deployment with Snow Leopard Server

Session 615

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System Image Creation and Deployment with Snow Leopard Server

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Agenda

- NetInstall, NetBoot and NetRestore
- System Image Utility 2
- Booting into images
- Under the hood
  - Diagnostics
  - Customization

NetInstall

- Installs Mac OS X from a Network disk volume
- Created from Mac OS X Installation disk
  - Shrink wrap
  - Bundled with hardware
- Allows users to customize all installation options
  - Localized languages
  - Printer drivers
- May include site-specific installation packages

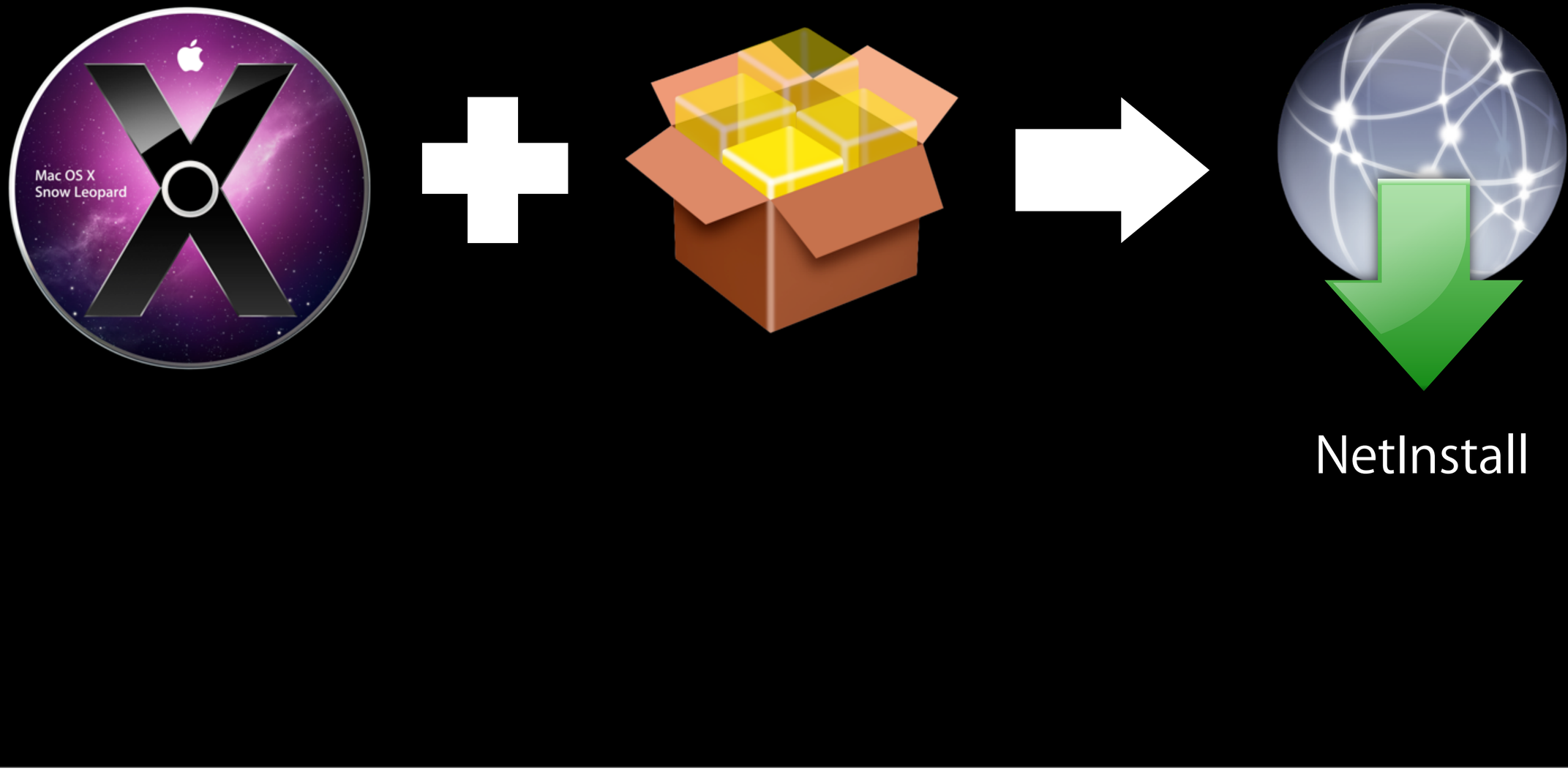
NetBoot

- Boots a computer into Mac OS X
- Created from
  - A hard drive volume with Mac OS X installed
  - A Mac OS X Installation disk
- All systems boot into an identical copy of the OS
- All local changes reverted between restarts
- Local hard drives can be unmounted using Diskless NetBoot
  - Hard drive recovery or diagnostic
  - System customization via Apple Remote Desktop

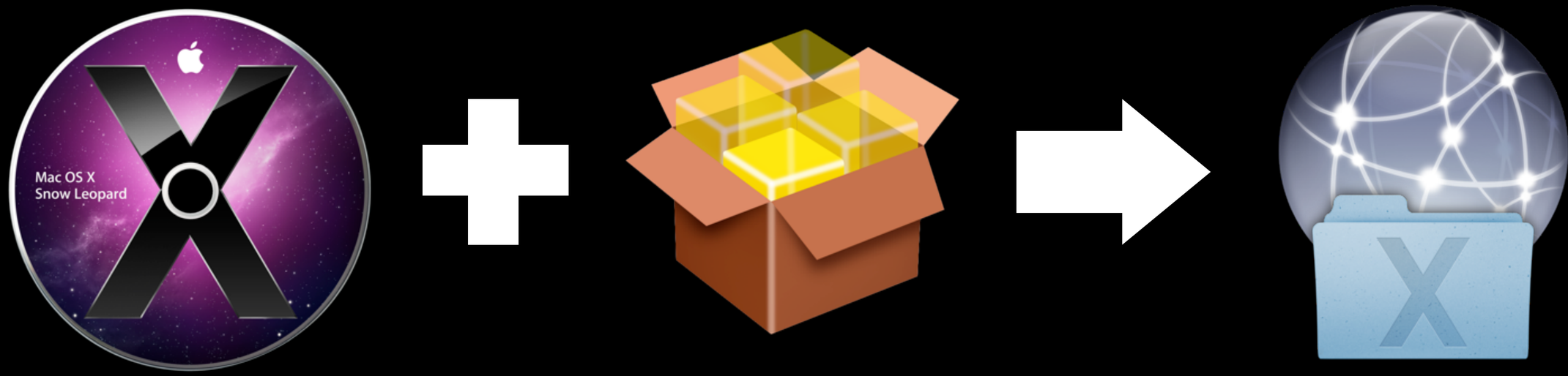
NetRestore

- Restores a hard drive volume over the network
- Created from
  - A hard drive volume with Mac OS X installed
  - A Mac OS X Installation disk
- May utilize Multicast ASR for more efficient network use
- May include computer-specific postrestore actions
  - Set system name
  - Bind to a directory (including authenticated bind)

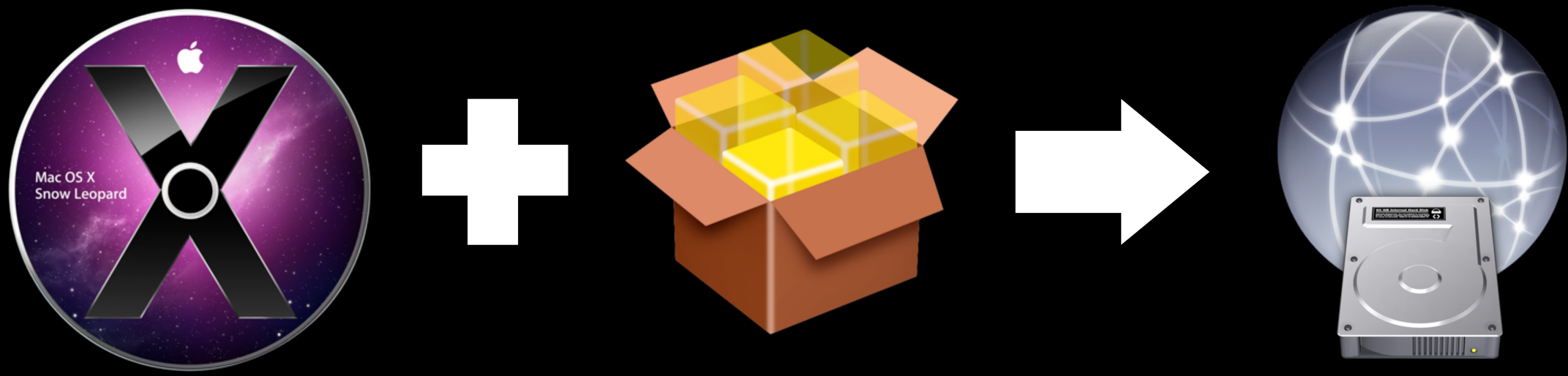
Scenarios



Scenarios



Scenarios



System Image Utility 2

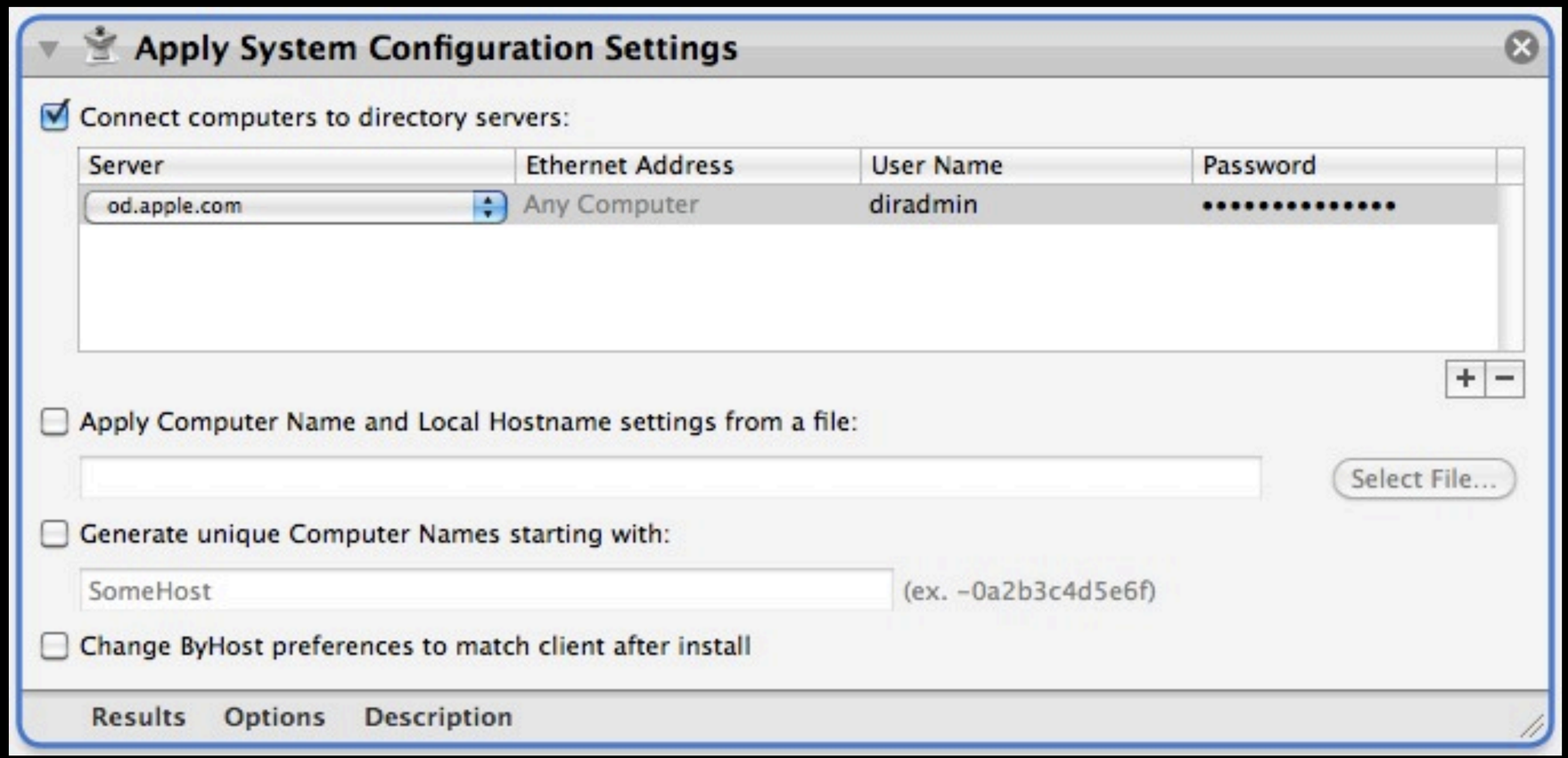
- Apple's de facto system image creation tool
- Stays in sync with latest Mac OS X changes
- Integrated with core Mac OS X technologies
  - Automator
  - Mac OS X Server NetBoot service

New in Mac OS X Snow Leopard

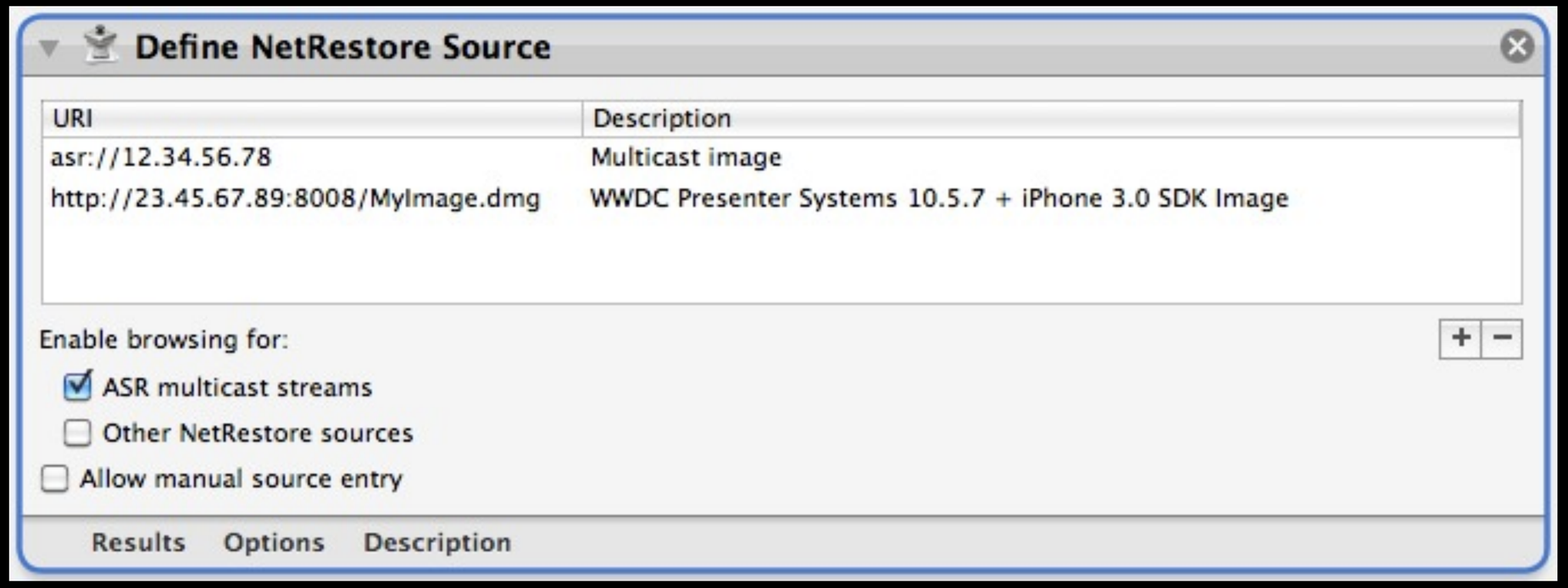
- NetRestore image type
  - Created from hard drive volumes
  - Created from Mac OS X installation disks
- Directory Binding
  - Per computer
  - Authenticated binding, e.g. Active Directory
- Custom NetRestore sources, including Bonjour discovery
- Improved Automator support
  - Variables
  - Services

NetRestore from Mac OS X Install Disc

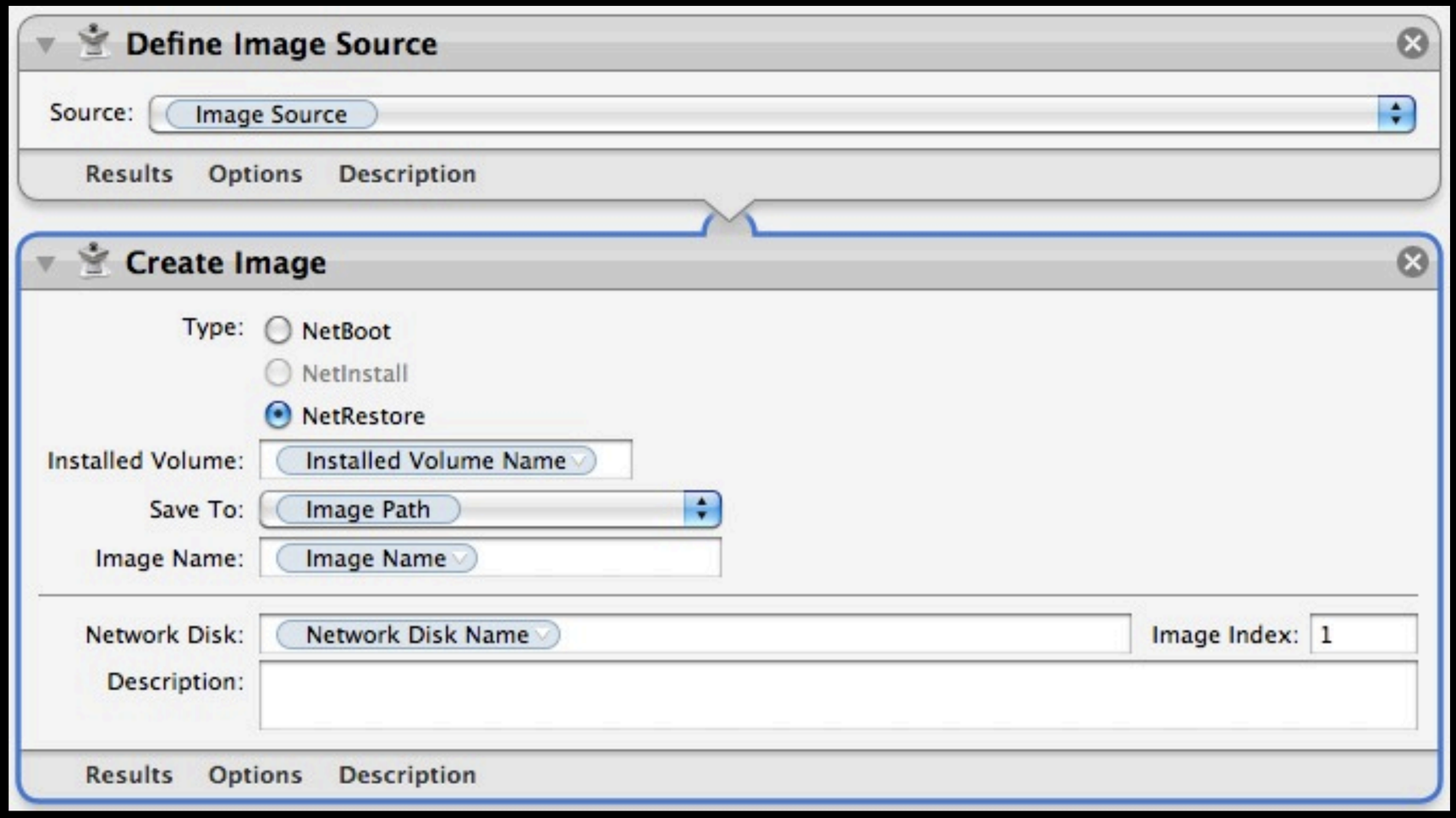
Directory Binding



Custom NetRestore Sources



Automator Support



Automator Services

Automator Services

Contextual Menu in Finder

Demo

Brian Nesse
Engineering Lead

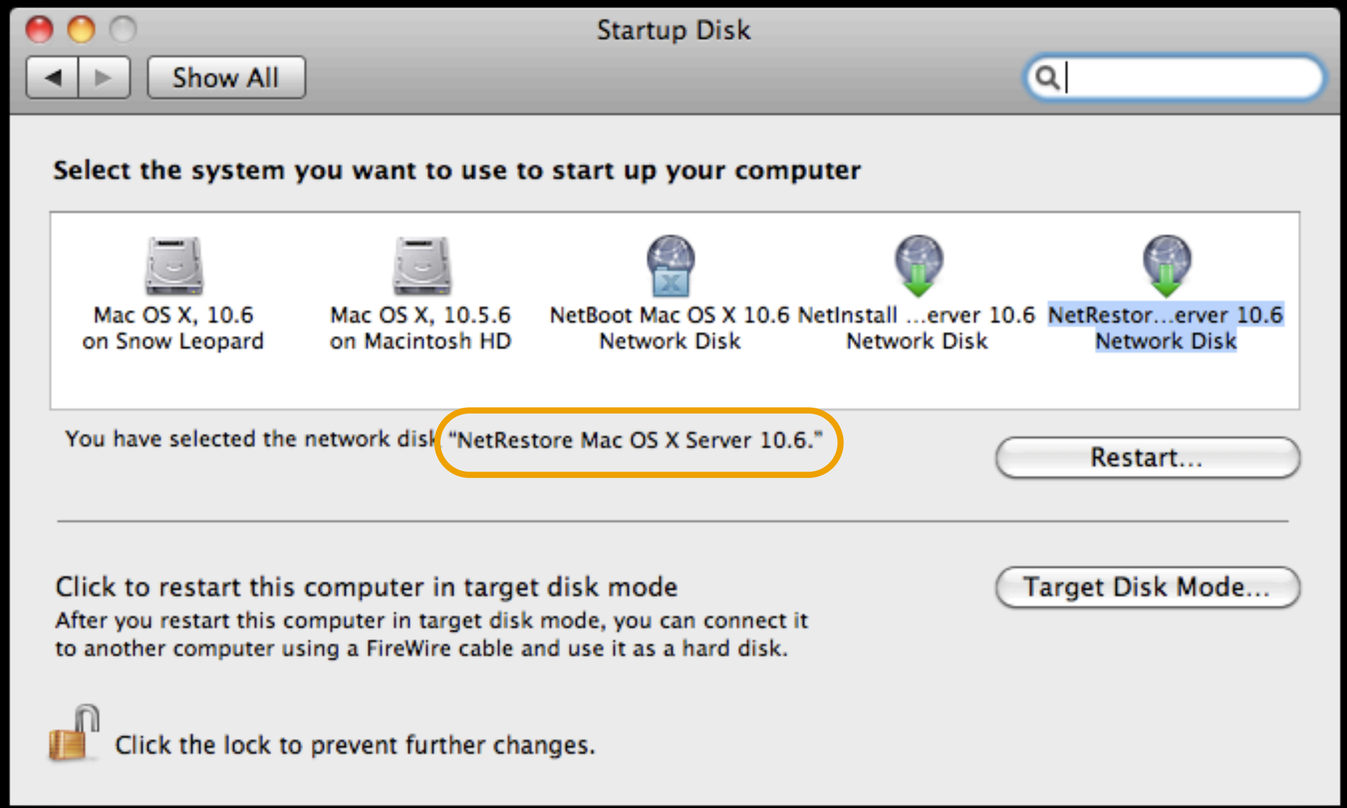
Booting into Images

- Startup Disk
  - NetBoot server on local network
  - Using DHCP helpers on router
- Startup Manager (“Option Boot”)
  - bootpd(8) relay
  - bless(8), nvram(8), com.apple.Boot.plist, bsdpc

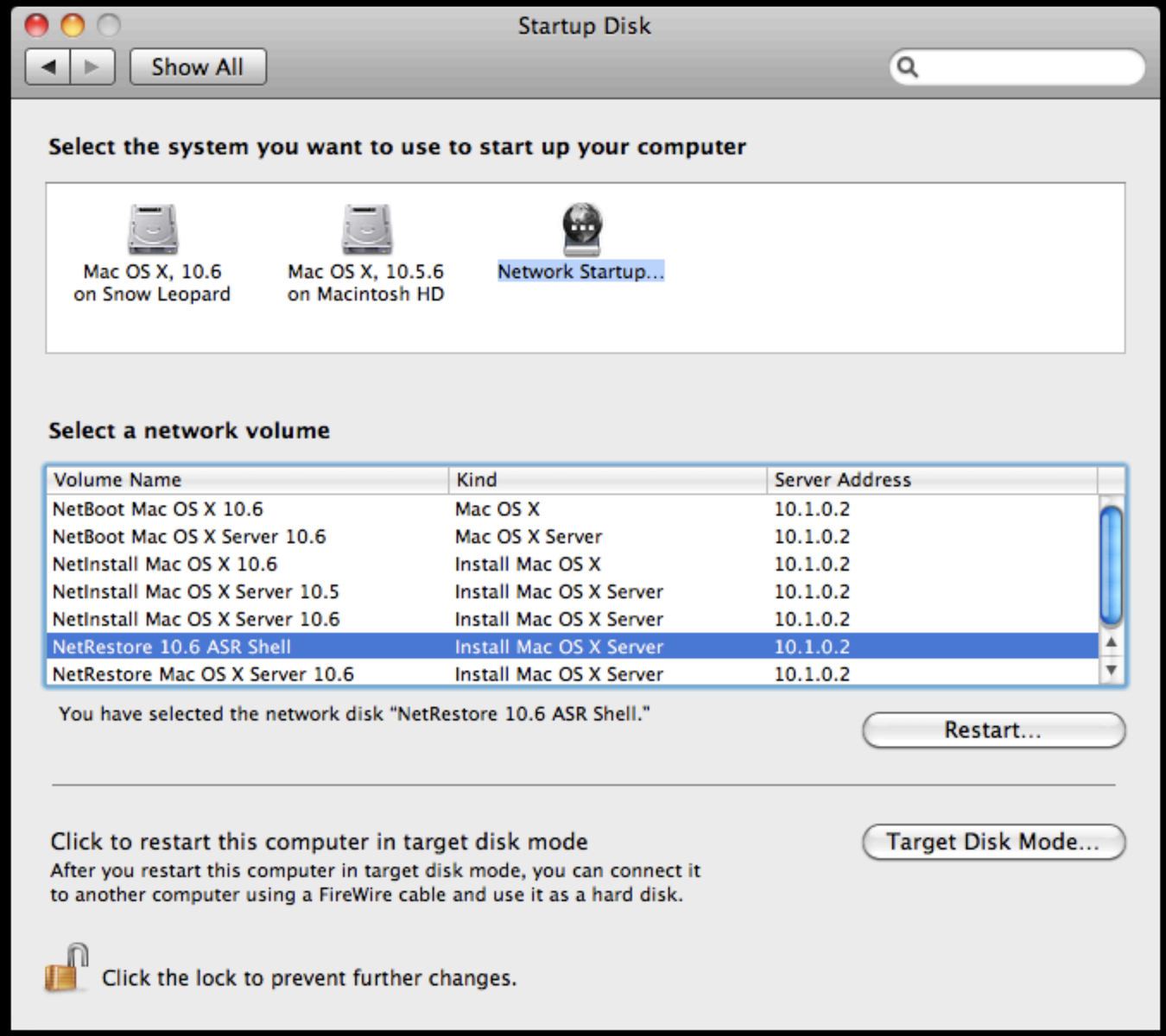
Startup Disk

Startup Disk

Startup Disk



Startup Disk



bootpd(8) relay

- Edit/etc/bootpd.plist

```
<key>relay_enabled</key>
<true/>
<key>relay_ip_list</key>
<array>
 <string>192.168.0.2</string>
 <string>10.0.0.2</string>
</array>
```

- Bring up bootpd

```
$ sudo launchctl load -w /System/Library/LaunchDaemons/bootps.plist
```

NetBoot from Command Line

- bless(8)
- nvram(8)
- com.apple.Boot.plist
- bsdpc

Under the Hood

- /etc/rc.netboot
- /etc/rc.installer_cleanup
- /etc/rc.install and /etc/minstallconfig.xml
- /etc/OSInstall.collection
- /var/db/MacOSXInstaller.choiceChanges
- /System/Installation/Packages/InstallPreferences.plist

Demo

Jussi-Pekka Mantere
Engineering Manager

Summary

- System Image Utility 2
  - NetRestore images
  - Automator and Services
- Booting into images
  - Startup Disk
  - Command-line utilities
  - com.apple.Boot.plist
- Above and beyond image customizations
  - MacOSXInstaller.choiceChanges
  - InstallPreferences.plist

More Information

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Documentation
Mac OS X Server
http://www.apple.com/server

Apple Training and Certification
http://training.apple.com

Related Sessions

Using Services in Snow Leopard for Scripting IT Tasks	Nob Hill Tuesday 5:00PM
Using Automator and Services to Integrate with Mac OS X	North Beach Friday 2:00 PM

Labs

Client Management Lab	Information Technologies Lab Friday 9:00 AM

Q&A

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